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**(71) Applicant and**

(72) Inventor: CYRULNIK, Reuven, Avrohom [US/US]; 639 Marshall Place, Long Beach, CA 90807 (US).

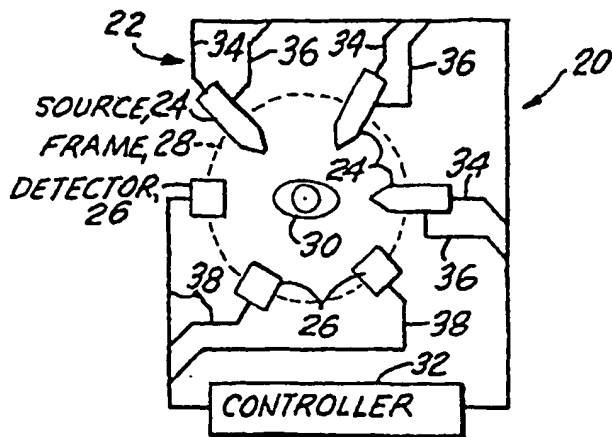
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(74) Agents: HELFGOTT, Samson et al.; Katten, Muchin, Zavis, Rosenman, 575 Madison Avenue, New York, NY 10022-2585 (US).

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**(54) Title: SYSTEM AND METHOD FOR NONINVASIVE DIAGNOSTIC IMAGING, DETECTION, AND IDENTIFICATION OF SUBSTANCES BY MICROWAVE/RF MODULATION OF X-RAYS AND APPLICATIONS IN TREATMENT OF DISEASES CHARACTERIZED BY THE PRESENCE OF PATHOLOGICAL MACROMOLECULES OR BY THE NEED FOR REGENERATION OF NORMAL TISSUE**



**(57) Abstract:** A modulated x-ray system and method provide various applications to increase medical diagnoses and treatment as well as non-medical scenarios. At low energy levels, it is used as a sophisticated medical diagnosis tool, localizing and imaging a variety of biological systems and conditions for further characterization, rather than for destruction. As a therapeutic device, it is used for directed treatment of infectious diseases, treatment of general medical diseases such as atherosclerosis and autoimmune diseases, and genetic therapy. In one embodiment, eliminating unwanted tissue anywhere in the body, effectively allows non-invasive surgery. In another embodiment, selective destruction/activation of specific cells allows for regeneration of cells and tissues, such as spinal cord regeneration.

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